

object is to provide a data output apparatus, a control apparatus, a data output method, and a data output program product that can efficiently narrow down appropriate candidates from a large number of data candidates.

5 Disclosure of the Invention

In order to solve the above described problems, the present invention provides a data output apparatus, a control apparatus, a data output method, and a data output program product such as described in the following.

10 (1) A data output apparatus, including: a preference score vote receiving unit receiving a vote of preference score of output data representing a degree of preference; a preference score counting unit counting the vote of preference score received by the preference score vote receiving unit; an output unit switching data to be output from first data to second data and outputting; and switch destination data determining unit determining, when the data output by the output unit is to be switched from the first
15 data to the second data, the second data based on a result of counting by the preference score counting unit.

(2) A control apparatus communicating with a data output apparatus for controlling the data output apparatus, including: a preference score vote receiving unit receiving a vote of preference score of output data representing a degree of preference;
20 preference score counting means for counting the vote of preference score received by the preference score vote receiving unit; an output unit outputting to the data output apparatus a control signal for switching data to be output by the output apparatus from first data to second data; and a switch destination data determining unit for determining the second data, when the control signal for switching data to be output by the output
25 apparatus from first data to second data is output from the output unit to the output apparatus, based on a result of counting by the preference score counting unit.

(3) A data output method, including: the preference score voting step of receiving a vote of preference score of output data representing degree of preference;

the preference score counting step of counting the vote of preference score; the data switching step of switching the output data from first data to second data; and the switch destination data determining step of determining the second data, when the first data being output is switched to the second data in the data switching step, based on the result of counting of the preference score.

(4) A data output program product causing a computer to execute a data output method, the method including the preference score voting step of receiving a vote of preference score of output data representing degree of preference; the preference score counting step of counting the vote of preference score; the data switching step of switching the output data from first data to second data; and the switch destination data determining step of determining the second data, when the first data being output is switched to the second data in the data switching step, based on the result of counting of the preference score.

Brief Description of the Drawings

Fig. 1 shows a specific example of a hardware configuration of a media data reproducing apparatus 100 in accordance with an embodiment of the present invention.

Fig. 2 is a functional block diagram representing a functional configuration realizing the function of switching media data to be reproduced, in media data reproducing apparatus 100 in accordance with an embodiment of the present invention.

Fig. 3 is a flow chart representing a flow of a switch destination media data determining process performed by media data reproducing apparatus 100 in accordance with an embodiment of the present invention.

Fig. 4 shows a specific example of a buttons-layout on a remote 30 controlling a TV set as media data reproducing apparatus 100 in accordance with the first embodiment.

Fig. 5 shows a specific example of a preference score table formed by a preference score counting unit 103 and stored in a preference score result storing unit

CLAIMS

1. A data output apparatus, comprising:
 - a preference score vote receiving unit (102) receiving a vote of preference score
 - 5 of output data representing a degree of preference;
 - a preference score counting unit (103) counting the vote of preference score received by said preference score vote receiving unit (102);
 - an output unit (105) switching data to be output from first data to second data and outputting; and
 - 10 a switch destination data determining unit (104) determining, when the data output by said output unit (105) is to be switched from the first data to the second data, said second data based on a result of counting by said preference score counting unit (103).
- 15 2. The data output apparatus according to claim 1, wherein said preference score vote receiving unit (102) is capable of receiving a plurality of votes in accordance with degree of preference for one said output data.
- 20 3. The data output apparatus according to claim 1, wherein said preference score vote receiving unit (102) receives a vote of degree of preference including a negative vote representing low preference.
4. The data output apparatus according to claim 1, wherein said preference score vote receiving unit (102) receives a vote of degree of
- 25 preference for the first data being output at present by said output unit (105).
5. The data output apparatus according to claim 1, wherein said preference score vote receiving unit (102) simultaneously receives a vote of

degree of preference for data other than said first data, including same attribute as said first data.

5 6. The data output apparatus according to claim 1, further comprising
a counting result reset unit (103) resetting the result of counting by said
preference score counting unit (103).

10 7. The data output apparatus according to claim 1, wherein
said switch destination data determining unit (104) determines probability of data
to be the second data switched to and output by said output unit (105) such that data of
high preference score has high probability, based on the result of counting of the
preference score by said preference score counting unit (103).

15 8. The data output apparatus according to claim 7, wherein
said switch destination data determining unit (104) forms a switch order such
that said data of which probability to be the second data is determined to be high
appears more frequently, based on the result of counting of the preference score by said
preference score counting unit (103).

20 9. The data output apparatus according to claim 1, wherein
said switch destination data determining unit (104) determines probability of data
to be the second data switched to and output by said output unit (105) such that data of
low preference score has high probability, based on the result of counting of the
preference score by said preference score counting unit (103).

25 10. The data output apparatus according to claim 9, wherein
said switch destination data determining unit (104) forms a switch order such
that said data of which probability to be the second data is determined to be high

appears more frequently, based on the result of counting of the preference score by said preference score counting unit (103).

11. The data output apparatus according to claim 1, further comprising
5 a preference score limit setting unit (106) setting a lower limit of preference score; wherein

said switch destination data determining unit (104) determines data having higher preference score than the lower limit set by said preference score limit setting unit (106) to be the second data switched and output by said output unit (105), based on the result
10 of counting by said preference score counting unit (103).

12. The data output apparatus according to claim 1, further comprising
a preference score limit setting unit (106) setting a higher limit of preference score; wherein

15 said switch destination data determining unit (104) determines data having lower preference score than the higher limit set by said preference score limit setting unit (106) to be the second data switched and output by said output unit (105), based on the result of counting by said preference score counting unit (103).

20 13. The data output apparatus according to claim 1, comprising in place of said preference score vote receiving unit (102), an output time measuring unit (102) measuring time of data output; wherein

said preference score counting unit (103) counts data preference score based on the output time measured by said output time measuring unit (102).

25 14. The data output apparatus according to claim 1, further comprising a new arrival information obtaining unit (108) obtaining new arrival information; wherein

said switch destination data determining unit (104) determines, when said new arrival information is obtained by said new arrival information obtaining unit (108), said new arrival information to be said second data.

5 15. The data output apparatus according to claim 1, wherein
said output unit (105) successively performs a process of switching and
outputting said first and second data.

10 16. The data output apparatus according to claim 15, further comprising
a data output time determining unit (110) determining time of data output by
said output unit (105); wherein
said output unit (105) performs said process of switching and outputting said
first and second data every time the time determined by said output time determining
unit (110) has passed.

15 17. The data output apparatus according to claim 16, wherein
said data output time determining unit (110) determines said time of data output
by said output unit (105) based on the result of counting preference score by said
preference score counting unit (103).

20 18. The data output apparatus according to claim 17, wherein
said data output time determining unit (110) determines output time of data
having higher preference score to be longer, based on the result of counting preference
score by said preference score counting unit (103).

25 19. The data output apparatus according to claim 17, wherein
said data output time determining unit (110) determines output time of data
having lower preference score to be longer, based on the result of counting preference

score by said preference score counting unit (103).

20. A control apparatus communicating with a data output apparatus for controlling said data output apparatus, comprising:

5 a preference score vote receiving unit (202) receiving a vote of preference score of output data representing a degree of preference;

preference score counting means for counting the vote of preference score received by said preference score vote receiving unit (202);

10 an output unit (205) outputting to said data output apparatus a control signal for switching data to be output by said output apparatus from first data to second data; and

a switch destination data determining unit (204) for determining said second data, when said control signal for switching data to be output by said output apparatus from said first data to second data is output from said output unit (205) to said output apparatus, based on a result of counting by said preference score counting unit (203).

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21. A data output method, comprising:

the preference score voting step (S201) of receiving a vote of preference score of output data representing degree of preference;

20 the preference score counting step (S202) of counting said vote of preference score;

the data switching step (S205) of switching the output data from first data to second data; and

25 the switch destination data determining step (S203) of determining said second data, when said first data being output is switched to the second data in said data switching step (S205), based on the result of counting of said preference score.

22. A data output program product causing a computer to execute a data output method, the method comprising

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ART 34 AMDT

the preference score voting step (S201) of receiving a vote of preference score of output data representing degree of preference;

the preference score counting step (S202) of counting said vote of preference score;

5 the data switching step (S205) of switching the output data from first data to second data; and

the switch destination data determining step (S203) of determining said second data, when said first data being output is switched to the second data in said data switching step (S205), based on the result of counting of said preference score.

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